



ABSTRACT OF THE DISCLOSURE

A heat engine having a rotary vane compressor and a rotary vane turbine operates in a highly efficient thermodynamic cycle which includes a power expansion phase up to ambient pressure and a limited temperature constant volume combustion followed by a constant pressure combustion and/or a constant temperature combustion. A compound propulsion engine utilizing the thermodynamic cycle has a primary stage having an axial compressor and a rotary vane turbine, and a secondary stage having an axial turbine and a rotary vane compressor, the two stages being aero-thermodynamically coupled to each other without provision of an interconnecting drive shaft.